Register prior to Congress passing the PSD statutes as part of the '77 amendments of the CAA, and were the subject of the litigation that had advanced to the United States Supreme Court at the time Congress passed the '77 amendments. *See* pages 39-41 of this memorandum.

Congress altered the term from "baseline air quality concentration" to "baseline concentration" and modified the definition from the '74 PSD regulations when it passed the PSD provisions of the '77 CAA amendments:

> The term "baseline concentration" means, with respect to a pollutant, the ambient concentration levels which exist at the time of the first application for a permit in an area subject to this part, based on air quality data available in the Environmental Protection Agency or a State air pollution control agency and on such monitoring data as the permit applicant is required to submit. Such ambient concentration levels shall take into account all projected emissions in, or which may affect, such area from any major emitting facility on which construction commenced prior to January 6, 1975, but which has not begun operation by the date of the baseline air quality concentration determination. Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under this part.

CAA § 169(4), 42 U.S.C.A. § 7479(4). As discussed in the previous section, the statute fails to define "air quality data" or "available" and their meaning is not clear from the statute itself. To clear up these ambiguities and practical problems EPA saw in applying the above statutory definition, EPA redefined "baseline concentration" and other aspects of the PSD program and these new regulations immediately became subject to the litigation that lead to the Alabama Power decision. *See* pages 47-49 of this memorandum.

The initial proposed PSD regulations published in the Federal Register after the CAA amendments were signed into law on August 7, 1977, contain the following succinct statement of the purpose of establishing the "baseline concentration":

> The baseline concentration is that concentration upon which consumption or expansion of the available increment is determined.

42 FR 54479, 57480 (November 3, 1977). This remains the reason why a baseline concentration must be established by the Department for North Dakota – so that consumption or expansion of the available increment may be determined.

These initial post '77 CAA amendment regulations attempted to reconcile the statutory definition of "baseline concentration" with the practical data gathering and modeling problems identified in the '74 regulations discussed above through use of the following lengthy definition:

> "Baseline concentration" means, with respect to any pollutant regulated under the Act, that ambient concentration reflecting air quality as of January 6, 1975. For annual average concentrations, this shall be based on measured or estimated concentrations for calendar year 1974. For short term concentrations, this shall be based on the second highest measured or estimated concentration at a given site for calendar year 1974. Major stationary sources or major modifications on which construction commenced prior to January 6, 1975, but which were not in operation as of January 6, 1975, shall be included in the baseline and shall not count against the maximum allowable increases established under this part. Where air quality data are not available for 1974 in any area, baseline concentrations may be estimated by either of the following techniques.
>
> (i)(a) Utilize air quality data obtained pursuant to the monitoring requirements of section 165(c) (1) and (2) of the Act or any other valid air quality data obtained since 1974, and
>
> (b) Adjust such air quality data to eliminate or neutralize the air quality impact of all new emissions occurring since January 6, 1975 (including non-major stationary sources and modifications) and control of existing sources occurring since January 6, 1975.

(ii) Utilize an appropriate atmospheric dispersion model based on 1974 emissions to estimate the baseline concentration.

42 FR at 57484, § 52.21(b)(14).

The above lengthy definition of "baseline concentration" was shortened and significantly changed in the revised PSD regulations published in the Federal Register on June 19, 1978:

> "Baseline concentration" means that ambient concentration level reflecting actual air quality as of August 7, 1977, minus any contribution from major stationary sources and major modifications on which construction commenced on or after January 6, 1975. The baseline concentration shall include contributions from:
>
> (i) The actual emissions from other sources in existence on August 7, 1977, except that contributions from facilities within such existing sources for which a plan revision proposing less restrictive requirements was submitted on or before August 7, 1977, and was pending action by the Administrator on that date shall be determined from the allowable emissions of such facilities under the plan as revised; and
>
> (ii) The allowable emissions of major stationary sources and major modifications which commenced construction before January 6, 1975, but were not in operation by August 7, 1977.

42 FR at 26383, col. 2, § 51.24(b)(11) and 42 FR at 26404, col. 3, § 52.21(b)(11) (identical definition).

The interpretive rules promulgated with the substantive rules explained these changes.

> On November 3, 1977, EPA proposed a definition of baseline concentration that reflected a January 6, 1975, starting date for most sources. Additionally, this proposal contained specific guidance on how baseline concentration might be established in a given area. Due to several implementation and legal concerns raised during the public comment period, the proposal of November 3 has been amended in three respects. The regulations promulgated today reflect an August 7, 1977, baseline date, place primary emphasis on tracking emission changes rather than on establishing a baseline concentration, and provide additional

guidance as to what emission levels contribute to the baseline concentration.

43 FR at 26400, col. 1. Thus, the June '78 regulations made three modifications and clarifications to the statutory definition of "baseline concentration": (1) a uniform baseline date of August 7, 1977, across the whole country, rather than a separate baseline date for each air quality region; (2) a primary emphasis on tracking emission changes rather than on establishing a baseline concentration; and (3) additional guidance as to what emission levels contribute to the baseline concentration.

With regard to the first modification, the uniform baseline date, EPA explained that it believed that a "strict interpretation" of CAA § 169(4) [42 U.S.C.A. § 7479(4)] "would create thousands of different areas each with different baseline starting points" by establishing a different baseline date and concentration for each new "first application for a permit in an area" established under CAA § 169(4). 43 FR at 26400, col. 1-2. As an alternative, EPA established a uniform baseline date because such a date "coincides with the time that PSD review under some of the new Act provisions could have taken place and with the time that States were given affirmative responsibility to protect the applicable PSD increment." Id. at col. 2.

With regard to the second modification and clarification, a primary emphasis on tracking emission changes rather than on establishing a baseline concentration, EPA explained that the "regulations ... no longer suggest that the baseline concentration be formally established," and that the "Administrator feels that increment consumption can best be tracked by tallying changes in the emission levels of sources contributing to the baseline concentration and

increases in emissions due to new sources." Id. This issue will be discussed later in the discussion of whether this approach really determines whether air quality is deteriorating.

With regard to the third modification and clarification, additional guidance as to what emission levels contribute to the baseline concentration, EPA explained:

> EPA generally intends to use an actual emissions concept in implementing the above baseline approach. The concept of an actual emissions baseline has been used in EPA's previous PSD regulations, and the Administrator believes that the Act intends for this concept to be continued. Section 169(4) defines baseline in terms of existing air quality. In carrying out an actual emissions baseline, EPA will use reasonable assumptions for various factors affecting the level of source operation. 1977 values will generally be used for hours of operation, capacity utilization, and types of materials combusted, processed and/or stored, *unless another previous year would be more representative* or such use would not be allowed under established permit conditions. Actual emissions also includes into the baseline any future increases in hours of operation or capacity utilization as they occur if such are allowed to the source as of August 7, 1977, and if the source could have been reasonably expected to make these increases on this date. This policy is consistent with the intent of the Act to base increment consumption on all emission increases from new and modified sources, but to allow consumption to occur from only certain non-modification activities (e.g., some fuel switches) of existing sources.

Id. at col. 2-3 (emphasis and italics supplied). *Compare,* e.g., definition of "major modification" at 43 FR 26382 which excludes from the definition of "major modification" (1) routine maintenance and repair, (2) increases in production rate which do not exceed operating design, (3) increases in hours of operation, (4) use of an alternative fuel or raw material if the source was capable of accommodating such fuel or material prior to January 6, 1975. *See also* N.D. Admin. Code § 33-15-15-01(1)(x) (defining "major modification" and the same basic exceptions in June '78 regulation).

The practical effect of this third modification and clarification of "baseline concentration" in the '78 rules and interpretive statement was to include in the baseline concentration all increases in air pollution emissions that would not have triggered new source review (NSR) as a major modification. The practical effect of the modification and clarification of "baseline concentration" in the August '80 rules and interpretive statement discussed in the previous section of this memorandum, which change is incorporated into North Dakota's current definition of "baseline concentration" at N.D. Admin. Code § 33-15-15-01(1)(d), was to look to "actual emissions" that are "representative" of "sources" "in existence" as of the minor source baseline date, rather than incorporating increased emissions that do not trigger NSR review.

As discussed in the previous section of this memorandum, the interpretive rule at 45 FR at 52714 at col. 2-3 allows the Department to determine whether the two year period preceding the minor source baseline date is "representative" of "normal source operation." "If a source can demonstrate that its operation *after* the baseline date is more representative of normal source operation than its operation preceding the baseline date," then "the definition of actual emissions" allows the Department "to use the more representative period to calculate the source's actual emissions contribution to the baseline concentration." 45 FR at 52714 at col. 2-3 (emphasis and italics supplied). The definition of "actual emissions" allows the Department to use "a different time period" other than the presumptive "two year period that precedes the particular date" ... "upon a determination that it is *more representative* of *normal source operation*." N.D. Admin. Code § 33-15-15-01(1)(a)(1).

This definition and its implications will be discussed in more detail in the next section of this memorandum. It is discussed here to put in context the change that was made from the '78 to the '80 regulations concerning the way of defining and using the definition of baseline concentration so that consumption or expansion of the available increment may be determined. The '78 regulations would have allowed only a "*previous year*" to be "*more representative*" of normal operation in establishing the baseline concentration. 43 FR at 26400, col. 2-3. The definition of "actual emissions" and the interpretive language in the August '80 regulations allow the Department to look to a source's "operation *after* the baseline date" if it is "more representative" of "normal source operation" in establishing the "baseline concentration" that will allow the Department to calculate consumption or expansion of the available increment. *See* N.D. Admin. Code § 33-15-15-01(1)(a)(1) and 43 FR at 26400, col. 2-3.

> The statutory definition of baseline concentration was in no sense a product of legislative inadvertence. Congress focused on how to define the baseline and fully understood the consequences of its chosen resolution. The Conference Committee explicitly acknowledged its adoption of the Senate definition of baseline, and the Senate report had explicitly rejected EPA's uniform date approach. Indeed, it purposely embraced the situation EPA's counsel considers anomalous: "Under this definition (of baseline) it is possible for nonmajor emitting sources to be constructed in the area after the date of enactment without having their emissions affect the ability of major emitters to use the increment available."
>
> This differential treatment of clean air areas, keyed to when the first major emitting facility applies for a permit, is based on a sound, practical consideration. As the Senate explained,
>
> > (t)he purpose is to use actual air quality data to establish the baseline. Where sufficient actual data are not available, the State may require the applicant to perform whatever monitoring the State believes is necessary to provide that information. This may involve monitoring for 12 months or more to establish an annual average.

636 F.2d at 375-76 (footnotes omitted).

The '80 regulations therefore amended its definitions to include a "major source baseline date" and a "minor source baseline date" and this change has been incorporated into North Dakota's PSD definitions. *See* N.D. Admin. Code § 33-15-15-01(1)(e); 40 CFR § 52.21(14) and 40 CFR § 51.166(b)(14). Alabama Power, however, was silent as to the second modification and clarification EPA made in the '78 regulations – that is, a primary emphasis on tracking emission changes rather than on establishing a baseline concentration. 43 FR at 26400, col. 2. The practical effect of this "primary emphasis on tracking emission changes" was that computer modeling of increment consuming emissions, rather than actual monitoring, would be the means of determining increment consumption. The above language quoted at length from Alabama Power suggests, however, that the Court viewed the legislative history as requiring at least an honest effort to establish a "baseline concentration" by monitoring rather than modeling. 636 F.2d at 375-76. The August '80 PSD regulations discussed at length the changes made in the regulations to provide for such monitoring as part of the process in establishing the "baseline concentration," but concluded that changes in the Alabama Power court's final opinion allowed "either monitoring or modeling as the method of analysis" for establishing the baseline concentration. 45 FR at 52724, col 1. EPA threw out all monitoring data that was "bubbler data," however, because such data was biased and unreliable. 45 FR at 52724, col. 3.

In Region No. 172, which consists of all counties in North Dakota except Cass County, the minor source baseline date for SO2 had been triggered December 19, 1977, and had already been in effect for close to three years when the August '80

regulations were promulgated. *See* A Review of the Historical Application of Prevention of Significant Deterioration in North Dakota, August 2001, by Department's Division of Air Quality. *See also* N.D. Admin. Code § 33-15-15-01(1)(c) (defining baseline areas in North Dakota). In December of 1977 when the baseline date was triggered, the only monitoring data available for SO2 were the "bubbler data" that the Department had gathered and found to be unreliable, was as EPA was to find it unreliable in the August '80 regulations just cited. A Review of the Historical Application of Prevention of Significant Deterioration in North Dakota at p. 13. *See also* Final Report: ND-REAP Air Quality Network, by Department's Division of Environmental Engineering (September 1997); Air pollution Control Grant: Final Report for the Twelve Months Ending 9/30/77, by Department's Division of Environmental Engineering (March 1978). Except this unreliable "bubbler data," there is no available monitoring data for the Department to consider in establishing a "baseline concentration" as of the minor source baseline date in 1977. Thus, the Department must follow the procedure outlined in the previous section of this memorandum to establish the "baseline concentration" for SO2 for each relevant source. *See* pages 67-73 above.

In summary, the terms "representative" and "normal source operation" arise out of the definition of "actual emissions" at N.D. Admin. Code § 33-15-15-01(1)(a)(1) as adopted and incorporated from the '80 regulations promulgated at 45 FR 52675 et seq. This definition allows the Department to establish the baseline concentration for all relevant sources based on a source's "operation *after* the baseline date" if it is "more representative" of "normal source operation" in establishing the "baseline concentration" that will allow the Department to calculate consumption or expansion of the available

increment. There is no reliable monitoring data for the Department to use from 1977 and 1978 to help establish a baseline concentration for SO2 based on monitoring. Thus, the Department must follow the procedure outlined in the previous section of this memorandum in establishing the "baseline concentration" for SO2 for each relevant source. *See* pages 67-73 above.

### 2. Calculating Increment Consumption for the Annual, Twenty-four Hour, and Three-hour Increments

The purpose of establishing a "baseline concentration" is to establish an initial concentration "representative" of air quality conditions on the minor source baseline date. *See* N.D. Admin. Code § 33-15-15-01(1)(d)(1)(a) and previous section of this memorandum. The baseline concentration must address major and minor "sources" which affected air quality in the relevant area on the baseline date. *See* N.D. Admin. Code §§ 33-15-15-01(1)(d)(1)(a) & 33-15-15-01(1)(c) and previous two sections of this memorandum. Once the baseline concentration is determined, the Department may use it to determine and calculate consumption or expansion of the available increment. Id. and 42 FR at 57480.

The Department may use "either monitoring or modeling as the method of analysis" for establishing the baseline concentration. 45 FR at 52724, col 1, and pages 90-93 above. However, there is no monitoring data available for the time period before the December 19, 1977 minor source baseline date that covers all counties in North Dakota but Cass County. *See* pages 91-93 above. Thus, the Department must establish the baseline concentration with modeling rather than monitoring. *See* pages 91-93 above.

The August '80 regulations change the June '78 regulations to a method of calculating the baseline concentration based on "actual emissions." *See generally* previous two sections of this memorandum. The operative language of the August '80 regulations allow a source to establish a baseline concentration based on a showing that its operation after the baseline date is "more representative" of "normal source operation" than its operation preceding the baseline date. 45 FR at 52714 at col. 2-3. The "definition of actual emissions" allows the Department "to use the more representative period" after the baseline date "to calculate the source's actual emissions contribution to the baseline concentration." Id. and pages 67-73 above.

The "definition of actual emissions" referred to in the interpretive language of the '80 regulations just quoted refers directly to the definitions of "actual emissions" in the substantive rules promulgated in the '80 regulations. *See* 45 FR at 52732, col. 1-2, § 51.24(a)(21) (definition of "actual emissions" required for SIP approval) and 45 FR at 52737, col. 3, § 52.21(b)(21) (definition of "actual emissions" for federal enforcement).

North Dakota adopted the definition of "actual emissions" from the '80 regulations, and amended it with the "WEPCO amendments." *See* pages 27-31 above. *Compare* 45 FR at 52732, col. 1-2, § 51.24(a)(21) and 45 FR at 52737, col. 3, § 52.21(b)(21) with N.D. Admin. Code § 33-15-15-01(1)(a) and with 57 FR at 32335, § 51.166(b)(21)(iv) & (v) (amending the definition of "actual emissions" to allow an "electric utility steam generating unit" to use an "actual" to "future actual" calculation in determining increment consumption when a plant makes a major modification under PSD-NSR or NSPS review). The "WEPCO amendments" to the definition of "actual emissions" at N.D. Admin. Code § 33-15-15-01(1)(a) are subdivisions (3) and (4). Id.

The definition of "actual emissions" and subdivisions (1) and (2) of N.D. Admin. Code § 33-15-15-01(1)(a) are derived from and identical to the August '80 regulations. Id. Thus, the Department may look to the interpretive language of the '80 regulations for guidance concerning the meaning and intent of the definition of "actual emissions" and subdivisions (1) and (2) of N.D. Admin. Code § 33-15-15-01(1)(a).

The relevant language from N.D. Admin. Code § 33-15-15-01(1)(a) provides:

> "Actual emissions" means the actual rate of emissions of a contaminant from an emissions unit, as determined in accordance with paragraphs 1 through 4.
>
> (1) In general, actual emissions as of a particular date must equal the average rate, in tons per year, at which the unit actually emitted the contaminant during a two-year period which precedes the particular date and which is representative of normal source operation. The department may allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions must be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.
>
> (2) The department may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

(Emphasis supplied.) The operative sentence from the '80 regulations describing how to establish a "baseline concentration" was discussed in the previous two sections of this memorandum:

> If a source can demonstrate that its operation after the baseline date is more representative of normal source operation than its operation preceding the baseline date, the definition of actual emissions allows the reviewing authority to use the more representative period to calculate the source's actual emissions contribution to the baseline concentration.

45 FR at 52714, col. 3. (Emphasis supplied.) This language from the '80 regulations refers specifically to the language from subdivision (1) of N.D. Admin. Code § 33-15-15-

01(1)(a). This section of this memorandum will discuss the application of N.D. Admin. Code § 33-15-15-01(1)(a)(1) to the calculation of the "baseline concentration" and to the calculation of increment consumption.

Before discussing how the definition of "actual emissions" derived from the '80 regulations applies to calculating the baseline concentration and increment consumption, it is useful to first summarize how the definition of "actual emissions" is used in three separate contexts under the CAA. The CAA has three programs specifically designed to ensure that no new air pollution – whether from new sources or from modifications to existing sources – can be emitted unless the source complies with NSR, and to which the definition of "actual emissions" and the concept of a baseline is relevant. 57 FR 32314, 32315 (July 21, 1992).

The '70 CAA required EPA to promulgate technology-based NSPS applicable to the construction or modification of stationary sources that cause or contribute significantly to any air pollution which may reasonably be anticipated to endanger public health or welfare. *See* CAA § 111(b)(1)(A), 42 U.S.C.A. § 7411(b)(1)(A); 57 FR at 32315. The NSPS provisions were "designed to prevent new air pollution problems" by regulating newly-constructed sources and changes occurring at existing sources that result in emissions increases. *See* National Asphalt Pavement Assoc. v. Train, 539 F.2d 775, 783 (D.C. Cir. 1976); 57 FR at 32315. For NSPS, Congress defined the term "modification" as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." CAA

§ 111(a)(4), 42 U.S.C.A. § 7411(a)(4); 57 FR at 32315. *Compare* N.D. Admin. Code § 33-15-15-01(x).

The '77 CAA amendments included preconstruction permitting requirements for major new and modified sources under two programs, PSD-NSR (part C of '77 CAA amendments) and nonattainment NSR (part D of '77 CAA amendments). Congress intended these programs (NSPS, PSD, and nonattainment NSR) to apply generally where industrial changes might increase pollution in an area. Alabama Power, 636 F.2d at 400. In fact, Congress incorporated the same definition of the term "modification" set forth in the NSPS provisions into parts C and D. *Compare* CAA § 111(a)(4), 42 U.S.C.A. § 7411(a)(4); CAA §169(2)(C), 42 U.S.C.A. § 7479(2)(C); and CAA § 171(4)), 42 U.S.C.A. § 7501(4).

As discussed at pages 30-50 above, the NSR program for PSD (CAA §§ 160-169) applies in attainment areas, i.e., in the areas that have attained the NAAQS. *See also* 57 FR at 32315. To receive a PSD permit, a prospective major new source, or major modification of an existing major source, must among other things show that: (1) it will not cause or contribute to a violation of the available PSD "increment," (2) it will not cause or contribute to a violation of a NAAQS, and (3) it will use the best available control technology or "BACT," which must be at least as stringent as any applicable NSPS or hazardous pollutant standard under CAA § 112, 42 U.S.C.A. § 7412. 57 FR at 32315.

Nonattainment NSR, part D of the '77 CAA amendments, applies only in NAAQS nonattainment areas. 57 FR at 32315. To receive a permit in such areas, major new and modified sources must (1) obtain emissions offsets, thereby assuring that

reasonable progress toward attainment of the NAAQS will occur, and (2) comply with the "lowest achievable emission rate (LAER)." 57 FR at 32315. Since all of North Dakota is a NAAQS attainment area, the Department has never had to apply part D of the '77 CAA amendments.

Both the PSD-NSR and nonattainment NSR programs require pre-construction review before a source may make a "major modification," which is defined as a physical change or change in the method of operation that "would result in a significant net emissions increase" of any pollutant or air contaminant subject to regulation under the CAA as incorporated into North Dakota's rules and SIP. 57 FR at 32316; N.D. Admin. Code § 33-15-15-01(1)(x). A "net emissions increase" is defined as the increase in "actual emissions" from the particular physical or operational change together with any other "contemporaneous" increases or decreases in actual emissions. 57 FR at 32316; N.D. Admin. Code § 33-15-15-01(1)(aa). EPA's nonattainment NSR regulations are set forth at 40 CFR §§ 51.165, 52.24 and in part 51, Appendix S, and contain applicability provisions regarding modifications that are nearly the same as the PSD-NSR provisions. 57 FR at 32316, FN 7.

The July '92 regulations describe the use of the definition of "actual emissions" under NSR for both PSD and nonattainment NSR:

> Applicability of the CAA's NSR provisions must be determined in advance of construction and is pollutant specific. In cases involving existing sources, this requires a pollutant-by-pollutant projection of the emissions increases, if any, that will result from the physical or operational change. Specifically, to determine whether a proposed physical or operational change will result in an emissions increase, the source must first determine a baseline level of actual emissions. The regulations define actual emissions on a particular date as "the average rate, in tons per year, at which the unit actually emitted the pollutant during a 2-year period which precedes the particular date and which is representative of normal

> source operation" (see 40 CFR § 52.21(b)(21)(ii)). The Administrator "shall" allow use of a different time period "upon a determination that it is more representative of normal source operation." Id. The EPA has typically used the 2 years immediately preceding the physical or operational change to establish the baseline (see 45 FR 52676, 52705, 52718 (1980)). However, it can allow the use of an earlier 2-year period that is more representative of normal source operations. For example, in WEPCO, EPA found the fourth and fifth years prior to the modification more representative of WEPCO's normal operations.
>
> Because the applicability determination must be made in advance of construction, EPA's NSR regulations provide that when an emissions unit "has not begun normal operations," actual emissions equal the "potential-to-emit of the unit" (see 40 CFR § 52.21(b)(21)(iv)). This approach is referred to as the actual-to-potential methodology. This regulatory provision may be overcome – and NSR will not apply – if the source owner agrees, in a federally-enforceable instrument – not to increase its actual emissions above baseline level (see e.g., 40 CFR § 52.21(b)(4)).

57 FR at 32316-17. (Emphasis supplied.)

The '92 regulations quoted above use the terms "baseline" and "baseline level" for the "actual emissions" level established under N.D. Admin. Code § 33-15-15-01(1)(a)(1) for each major source and minor source under NSR review of a new major source or a major modification of an existing major source. This use of the term "baseline" and "baseline level" is a separate term from "baseline concentration" as defined at N.D. Admin. Code § 33-15-15-01(1)(d) and discussed in detail at pages 60-88 above, although both are established through the use of the definition of "actual emissions" at N.D. Admin. Code § 33-15-15-01(1)(a)(1). The difference between the term "baseline concentration" and the term "baseline level" is primarily *the different time periods* for which they are established. The "baseline concentration" is the "the average rate, in tons per year, at which the unit actually emitted the contaminant during a two-year period which precedes the particular date and which is representative of normal

source operation," which "particular date" for the "baseline concentration" is the minor source baseline date triggered in all counties in North Dakota but Cass County on December 19, 1977. N.D. Admin. Code §§ 33-15-15-01(1)(a)(1) and 33-15-15-01(1)(d). The "baseline level" is the "the average rate, in tons per year, at which the unit actually emitted the contaminant during a two-year period which precedes the particular date and which is representative of normal source operation," which "particular date" for the "baseline level" is "typically ... the 2 years immediately preceding the physical or operational change" for a major modification (57 FR at 32317, col. 1), or "the two-year period preceding the date of concern" which in the case of a new source is "approximately the date" the new source "submits its application." 45 FR at 52705.

For both the "baseline concentration" and the "baseline level," the definition of "actual emissions" at N.D. Admin. Code § 33-15-15-01(1)(a)(1) and 40 CFR § 52.21(b)(21)(ii) allow the administering agency to use of a different time period than the presumptive two-year period preceding the triggering date "upon a determination that it is more representative of normal source operation." 57 FR at 32317, col. 3. The difference between the two is that for the "baseline concentration" the "more representative" period occurs "after" the triggering "particular date," which in the case of the "baseline concentration" is the "minor source baseline date." 45 FR at 52714, col. 3. In contrast, for the "baseline level" the "more representative" time period is an "earlier" two-year period "that is more representative of normal source operations." 57 FR at 32317, col. 1. For example, in WEPCO, EPA found the fourth and fifth years prior to the modification more representative of WEPCO's normal operations after remand by the court of appeals. Id.

The "actual emissions" representative of the "baseline concentration" or the "baseline level" must be expressed as an "actual *rate* of emissions of a contaminant from an emissions unit," and "*must* equal *the average rate*, in tons per year, *at which the unit actually emitted the contaminant* during a two-year period which precedes the particular date and which is representative of normal source operation." N.D. Admin. Code § 33-15-15-01(1)(a)(1). The "actual emissions" requires that the "*rate*" for both the "baseline concentration" and "baseline level" *must* not only "equal *the average rate*, in tons per year, *at which the unit actually emitted the contaminant*," but also "must be calculated using the unit's actual operating hours, production *rates*, and types of materials processed, stored, or combusted during the selected time period." N.D. Admin. Code § 33-15-15-01(1)(a)(1). The operative word in the rule is the word "rate."

The Department must determine the PSD "baseline concentration" for SO2 for each of the periods of time for which a PSD increment applies. N.D. Admin. Code § 33-15-15-01(2)(b); CAA § 163(b), 42 U.S.C.A. § 7473(b). For SO2, there are three such periods – annual, twenty-four-hour, and three-hour. Id. The Department must first determine the time period which it will use to calculate the "baseline concentration" – either the two years preceding the minor source baseline date or another "different time period" *after* the minor source baseline date that is "more representative" of normal source operation. N.D. Admin. Code § 33-15-15-01(1)(a)(1). The Department must then calculate the "actual *rate* of emissions" of the contaminant, in this case SO2, and must express that rate as "*the average rate*, in tons per year, *at which the unit actually emitted the contaminant*" over the time period the Department has determined to be representative of normal operation for that source – either the two years preceding the

minor source baseline date or another "different time period" *after* the minor source baseline date that is "more representative" of normal source operation. N.D. Admin. Code § 33-15-15-01(1)(a)(1).

To determine baseline concentration, the Department must calculate the "*average rate*, in tons per year," at which the source actually emitted the contaminant over the representative period and determine the "baseline concentration" for each of the time periods for which the increments apply – annual, twenty-four-hour, and three-hour. N.D. Admin. Code § 33-15-15-01(2)(b); CAA § 163(b), 42 U.S.C.A. § 7473(b). The annual "baseline concentration" is the "*average rate*, in tons per year, *at which the unit actually emitted the contaminant*" over the time period that is representative of normal source operation – either the two years preceding the minor source baseline date or another "different time period" *after* the minor source baseline date that is "more representative" of normal source operation. N.D. Admin. Code § 33-15-15-01(1)(a)(1). For example, if the period "representative" of "normal source operation" is a two year period and the contaminant is SO2, the annual "baseline concentration" for the source in question would be the "*average rate*, in tons per year," at which the source emitted SO2 over the representative two year period.

The twenty-four-hour "baseline concentration" is the "actual *rate* of emissions" of SO2 emitted at the "*average rate*, in tons per year" over a twenty-four-hour period. To determine this "*average rate*, in tons per year" emitted over a twenty-four-hour period, the average rate "in tons per year" is divided by the number of days in a year (365 or 366) to determine the average rate in tons per day (i.e., the appropriate fraction of the average rate, in tons per year, that applies to one day).

The three-hour "baseline concentration" is calculated in the same way. The three-hour "baseline concentration" is the "actual *rate* of emissions" of SO2 emitted at the "*average rate*, in tons per year" over a three-hour period. To determine this "*average rate*, in tons per year" emitted over a three-hour period, the average rate "in tons per year" is divided by the number of three-hour periods in a year (2920 or 2928) to determine the average rate in tons per three-hour period (i.e., the appropriate fraction of the average rate, in tons per year, that applies to each three-hour period).

The '80 regulations give an example that may be used by the Department as a guide for calculating increment expansion or consumption. In the example, a new source (Source A) can emit 700 tons per year (tpy) of SO2 at maximum operating capacity after application of BACT. 45 FR at 52704, col. 3. 700 tpy is its *physical* "potential to emit." Id. Modeling reveals that emission of 700 tpy of SO2 will violate increment, but 600 tpy will not, so Source A agrees to limit SO2 emissions to 600 tpy in its permit. Id. 600 tpy is its *legal* "potential to emit." Id. During its first three years of operation, Source A's emissions are 250 tpy the first year, and 300 tpy the next two years, at which time another new source applies for a permit within Source A's "area of impact." Id. In calculating its impact on PSD and ambient standards, "Source B is required to model the emissions of Source A." Id. The example then explains how the definition of "actual emissions" is applied under the increment consumption policy discussed above:

> Under EPA's increment consumption policy..., Source A's actual emissions should be modeled. Because Source A has an individually-tailored permit, the definition of actual emissions allows the reviewing authority to presume that the allowable emissions in Source A's PSD permit reflects its actual emissions, unless the reviewing authority or

source applicant has reason to believe that allowable emissions are not representative of actual source emissions.

> In the case of source A, allowable emissions, in fact, differ from actual emissions. Assuming that the reviewing authority is aware of this difference as a result of periodic assessment or because Source B has presented this information in its application, Source A is modeled at its actual emissions rate representative of normal source operation during a two-year period preceding the date of concern. In this case, the date of concern would be approximately the date source B submits its application. The reviewing authority should, therefore, look to the two-year period preceding that date unless that period of time was atypical of normal source operation. For source A, the two-year period preceding Source B's application can be considered representative of normal source operation. For source A, the two-year period preceding Source B's application can be considered representative of normal source operation. Source A's actual emissions during that period, on an average annual basis, are approximately 300 tpy. The modeling of increment consumption for Source B should assume that emissions rate for Source A.

45 FR at 52704-52705.

The WEPCO court rejected EPA's attempt to base the facility's PSD increment consumption on the worst case assumption of "round-the-clock operations (24 hours per day, 365 days per year) because WEPCO *could potentially* operate its facility continuously, despite the fact that WEPCO has never done so in the past." 891 F.2d at 916. Rather, the WEPCO court reasoned:

> If the source has no actual emissions because it has yet to commence operating, its hypothetical, projected emissions are included in the baseline. *If, however, the source is an established operation, a more realistic assessment of its impact on ambient air quality levels is possible, and thus is directed.*

Id. at 917. (Italics in original.) *Compare* U.S. v. Murphy Oil USA, Inc., 143 F.Supp.2d 1054, 1104-05 (D. Wis. 2001) (distinguishing WEPCO case because the WEPCO facility "simply replaced old pieces of equipment with new equivalents" whereas